Name_____ Literal Equations Worksheet

Taken from: Page 129 #8-16 even, 17, 20, 22, 30, 32

Algebra

Solve each equation or formula for the variable indicated.

1. $u = vw + z$, for v

$u - z = vw$

$\frac{u-z}{w} = v$

2. $fg - 9h = 10j$, for g

$fg = 10j + 9h$

$g = \frac{10j + 9h}{f}$

3. $r = \frac{2}{3}t + v$, for t

$r - v = \frac{2}{3}t$

$3(r-v) = 2t$

$\frac{3(r-v)}{2} = t$

4. $\frac{10ac - x}{11} = -3$, for a

$10ac - x = -33$

$10ac = -33 + x$

$a = \frac{-33 + x}{10c}$

5. $-14n + 1 = rt - 4n$, for n

$-10n + 1 = rt$

$-10n = rt - 1$

$n = \frac{rt - 1}{-10}$

6. $ax + z = aw - y$, for a

$ax = aw - y - z$

$ax - aw = -y - z$

$a(x - w) = -y - z$

$a = \frac{-y - z}{x - w}$

7. The formula to compute a person's body mass index is $B = 703 \cdot \frac{w}{h^2}$. B represents the body mass index, w is the person's weight in pounds, and h represents the person's height in inches.

a. Solve the formula for w.

$Bh^2 = 703 \cdot w$

$\frac{Bh^2}{703} = w$

b. What is the weight to the nearest pound of a person who is 64 inches tall and has a body mass index of 21.45?

$\frac{21.45 \cdot 64^2}{703} =$ 125 lbs

8. Acceleration is the measure of how fast a velocity is changing. The formula for acceleration is $a = \frac{v_f - v_i}{t}$. a represents the acceleration rate, v_f is the final velocity, v_i is the initial velocity, and t represents the time in seconds.

a. Solve the formula for v_f.

$at = v_f - v_i$

$at + v_i = v_f$

b. What is the final velocity of a runner who is accelerating at 2 feet per second squared for 3 seconds with an initial velocity of 4 feet per second?

$2(3) + 4 =$ 10 ft/s

Write an equation and solve for the variable indicated.

9. Ten plus eight times a number a equals eleven times another number d minus six. Solve for a.

$10 + 8a = 11d - 6$

$8a = 11d - 6 - 10$

$a = \frac{11d - 16}{8}$

10. Three fourths of a number p less two is five sixths of another number r plus five. Solve for r.

$\frac{3}{4}p - 2 = \frac{5}{6}r + 5$

$\frac{3}{4}p - 7 = \frac{5}{6}r$

$\frac{6}{5}(\frac{3}{4}p - 7) = r$